

32 24. (Amended) A method according to claim 21, wherein said first soft metal layer has a thickness of at least 100 nm.

33 39. (Amended) A dual-step deposition method for making a soft metal conductor for use in an electronic device comprising:

depositing a first layer of metal by a physical vapor deposition process to a first thickness, and

depositing a second layer of metal on top of said first layer of metal to a second thickness larger than said first thickness by a method selected from the group consisting of chemical vapor deposition, electroplating and electroless plating; and

wherein said first and said second metal layer are deposited of a material selected from the group consisting of Al, Cu, Ag, CuAl, CuAg, AgAl and CuAgAl.

34 50. (Amended) A method for forming an interconnect in a logic of memory device according to claim 49, wherein said at least one layer of metal comprises two layers of metal deposited into a line or via hole.

35 52. (Amended) A method for forming an interconnect surrounded at least on three sides by an amorphous barrier layer comprising

depositing an amorphous barrier layer of refractory metal nitride or carbide into a line or via hole by a vapor deposition technique, and

depositing a layer of a conductive metal having an average grain size of not smaller than 0.3 μ m on top of said amorphous barrier layer filling said line or via hole; and

further comprising depositing a hard dielectric layer between said amorphous barrier layer and said conductive metal.

53. (Amended) A method for forming an interconnect surrounded on three sides by an amorphous barrier layer according to claim 52, wherein said refractory metal in said refractory metal nitride or carbide is selected from the group consisting of W, Ta and Ti.

54. (Amended) A method for forming an interconnect surrounded at least on three sides by an amorphous barrier layer according to claim 52, wherein said conductive metal is

selected from the group consisting of Cu, Ag, Al, CuAg, CuAl, AgAl and CuAgAl.

55. (Amended) A method for forming an interconnect surrounded at least on three sides by an amorphous barrier layer according to claim 52, wherein said vapor deposition technique is a chemical vapor deposition technique.

56. (Amended) A method for forming an interconnect surrounded at least on three sides by an amorphous barrier layer according to claim 52, wherein said refractory metal nitride is deposited by a chemical vapor deposition technique conducted at a reaction temperature about 300°C and about 400°C.

57. (Amended) A method for forming an interconnect surrounded at least on three sides by an amorphous barrier layer according to claim 52, wherein said refractory metal nitride is deposited by a sputtering technique by using a composite target.

58. (Amended) A method for forming an interconnect surrounded at least on three sides by an amorphous barrier layer according to claim 52 further comprising the step of annealing said amorphous barrier layer at a temperature of not lower than 400°C for at least ½ hour prior to the conductive metal deposition step.

59. (Amended) A method for forming an interconnect surrounded at least on three sides by an amorphous barrier layer according to claim 52 further comprising the step of depositing a seed layer of said conductive layer prior to the conductive metal deposition step.

62. (Amended) A method for forming an interconnect surrounded at least on three sides by an amorphous barrier layer according to claim 52, wherein said hard dielectric layer is deposited of a material selected from the group consisting of fluorinated oxide and amorphous or porous oxide treated with SiH₄ or CH₄.

Please add the following new claims:

67. (New) The method of claim 21 wherein said first layer of said soft metal is